

ter control device 88 is also preferably connected to a photoelectric cell 92 which is appropriately positioned in combination with light 94 in relation to board 34 so that if there is an interruption in the board a signal will be provided to the master control so that both the resin and the hardener pumps can be stopped thus ceasing further production of mixed adhesive. Preferably, means will also be provided to remove resin and hardener and liquid mixed adhesive from the manifold, mix chamber and disperser in the event of such a shut down. For example, air, water or a combination of air and water can be forced into the manifold to force resin, hardener and mixed adhesive out through the disperser orifices and thereby prevent it from hardening inside the manifold, mix chamber and disperser. In FIG. 3 a compressed air reservoir is shown at number 96. This reservoir is connected by means of line 98 to the manifold 26 and a valve 100 is positioned on this line to ordinarily keep it closed. Similarly, a water reservoir is shown at numeral 102 and is connected to the manifold by means of line 104. Valve 106 is also provided to keep line 104 closed. If, however, a signal is provided from the photoelectric cell 92 to the master control that the motion of board 34 has stopped, the valves 100 and 106 can be opened to allow air and water to be forced into the manifold. Preferably, a timing device will be incorporated into this system so that the valve 100 will be opened to allow air to flow into the manifold several minutes after the stopping of the board and so that valve 106 will not be opened to allow water flow into the manifold until several minutes after air flow has started. Thus, minor problems in the board's motion which can be corrected before hardening begins will not result in the evacuation of resin and hardener and liquid adhesive from the manifold, mix chamber and disperser.

It will thus be appreciated that there has been described a method and apparatus for applying a multi-component adhesive by which precise ratios of resin to hardener may be easily maintained when the resin or hardener undergo substantial changes in viscosity or when the volumetric requirements for adhesive output are substantially modified. Although the invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made only as an example and that the scope of the invention is defined by what is hereafter claimed.

What is claimed is:

1. An applicator for a multi-component liquid adhesive consisting of a mixture of a liquid resin and a liquid hardener comprising:
 - (a) a liquid resin reservoir;
 - (b) a liquid hardener reservoir;
 - (c) means for mixing liquid resin and liquid hardener to form a multi-component liquid adhesive;
 - (d) an adhesive dispersing means;
 - (e) a liquid resin conduit means connecting the liquid resin reservoir to the means for mixing liquid resin and liquid hardener;
 - (f) a liquid hardener conduit means connecting the liquid hardener reservoir to the means for mixing liquid resin and liquid hardener and means for moving the hardener through said conduit means to the means for mixing liquid resin and liquid hardener;
 - (g) a resin pump for moving resin from the liquid resin reservoir through the resin conduit means to the means for mixing liquid resin and liquid hardener and a variable output capacity power source for driving said resin pump;

- (h) means for sensing the instantaneous speed of the resin pump; and
- (i) means for varying the instantaneous power output of the power source for driving the resin pump such that said output is proportional to the instantaneous speed of said resin pump.

2. The apparatus as defined in claim 1 wherein the means for moving the hardener through the hardener conduit means from the hardener reservoir to the means for mixing liquid resin and liquid hardener is a hardener pump driven by a second variable output capacity power source and wherein there is a means for sensing the instantaneous speed of the hardener pump and a means for varying the output of said second variable power source such that said output is proportional to the instantaneous speed of said hardener pump.

3. The apparatus as defined in claim 1 wherein the means for mixing liquid resin and liquid hardener is adjacent to the adhesive dispersing means.

4. The apparatus as defined in claim 1 wherein the variable output capacity power source is a direct current electrical motor connected in electrical circuit to a direct current electrical power source.

5. The apparatus as defined in claim 4 wherein the resin pump has a rotatable axial shaft and the direct current electrical motor has a rotatable axial shaft and said shafts are connected by means for transmitting rotational motion.

6. The apparatus as defined in claim 5 wherein the means for sensing the instantaneous speed of the resin pump is positioned adjacent the axial shaft of the direct current electrical motor so as to sense the instantaneous speed of said axial shaft of the electrical motor and thereby indirectly sense the instantaneous speed of the resin pump.

7. The apparatus as defined in claim 2 wherein the second variable output capacity power source is a second direct current electric motor connected in electrical circuit to a direct current electrical power source.

8. The apparatus as defined in claim 7 wherein the hardener pump has a rotatable axial shaft and the direct current electrical motor has a rotatable axial shaft and said shafts are connected by a means for transmitting rotational motion.

9. The apparatus as defined in claim 8 wherein the means for sensing the instantaneous speed of the hardener pump is positioned adjacent the axial shaft of the second direct current electrical motor so as to sense the instantaneous speed of said axial shaft of the second electrical motor and thereby indirectly sense the instantaneous speed of the resin pump.

10. The apparatus as defined in claim 2 wherein control means are provided for adjusting the speeds of the resin pump and the hardener pump by proportional amounts.

11. The apparatus as defined in claim 10 wherein control means are provided for moving a surface to be bonded beneath the adhesive dispersing means and wherein there is also provided sensing means for detecting the absence of said surface to be bonded and control means for simultaneously stopping the resin pump and the hardener pump in response to such stopping of said surface to be bonded.

12. The apparatus as defined in claim 10 wherein there is provided a means for forcing air into the means for mixing liquid resin and liquid hardener and control means for activating said means for forcing air into the